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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/525,262

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Akira Nakano

MATS:057

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EXAMINER

WEINSTEIN, LEONARD J

ART UNIT

PAPER NUMBER

3746

MAIL DATE

DELIVERY MODE

07/30/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/525,262	<b>Applicant(s)</b> NAKANO ET AL.	
	<b>Examiner</b> LEONARD J. WEINSTEIN	<b>Art Unit</b> 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4,5 and 7-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,5 and 7-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. This office action is in response to the amendment of June 1, 2009. In making the below rejections and/or objections the examiner has considered and addressed each of the applicant's arguments.
2. The examiner acknowledges the amendments to claims 1 and 5. The examiner notes that claims 8 and 9 have been introduced.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katayama et al. JP 2003-42064 in view of Lee et al. US 6,446,454.

- a. Katayama teaches all the limitations as claimed for a hermetic compressor comprising: **[claims 1 and 5]** an electric motor unit 105, a compressing unit (106,

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112, 130) driven by the electric motor unit 105, and a hermetic container 101 accommodating the electric motor unit 105 and the compressing unit (106, 112, 130), wherein the compressing unit (106, 112, 130) comprises a compressing room 122 having an compressing room opening 134b, a suction valve 135 disposed at the compressing room opening 134b, a suction muffler 143 having a suction muffler body 143a forming a sound-deadening space, a first communicating path 145 directly communicating with the suction valve 135 and with the sound- deadening space 143a (Katayama – Abstract, Solution Section), and a second communicating path 144 communicating with the hermetic container 101 and with the sound-deadening space 143a, wherein a first path opening 145a, which is situated in the sound-deadening space 143a, of the first communicating path 145, and an second path opening 144a, which is situated in the sound-deadening space 143a, of the second communicating path 144 open in a substantially identical direction and in a horizontal direction, as shown in figure 3; **[claim 5]** wherein the first communication path 145 is disposed above the second communication path 144.

b. Katayama fails to teach the following limitations that are taught by Lee for a hermetic compressor including: **[claim 1]** a wall (upper wall defining space referenced by numeral 28 in figure 4) of the suction muffler body 200 has an integrally formed fixed sound-insulating wall (lower wall defining space referenced by numeral 28 being integral with the sidewalls extending from the upper wall defined the space 28) forming an opposite face confronting both of

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two openings (as defined by the openings of elements 22 and 25 within the space referenced by numeral 24a) of the first 22 and second 25 communication paths situated in the sound-deadening space 24a, and the integrally formed fixed sound-insulating wall (lower wall defining space referenced by numeral 28) reinforcing a frame of the suction muffler body 200, and wherein the sound-insulating wall (lower wall defining space referenced by numeral 28) and the wall of the suction muffler body 200 form a blocked sealed space 28 to reduce sound transmission (Lee - col. 3 ll. 67 - col. 4 ll. 2); **[claim 5]** wherein a wall (upper wall defining space referenced by numeral 28 in figure 4) of the suction muffler body 200 has an integrally formed fixed sound-insulating wall (lower wall defining space referenced by numeral 28 being integral with the sidewalls extending from the upper wall defined the space 28) at a place at least confronting (as shown in figure 4) both of the openings (as defined by the openings of elements 22 and 25 within the space referenced by numeral 24a) situated in the sound-deadening space 24a, and reinforcing the wall a frame (framed of element 200 defined by its outer walls) of the suction muffler body 200, wherein the sound-insulating wall (lower wall defining space referenced by numeral 28) works as a guiding wall for guiding gas sucked from a second communication 22 path to a first communication path 25 smoothly (Lee - col. 3 ll. 67- col. 4 ll. 2), wherein the sound-insulating wall (lower wall defining the space 28) and the wall (upper wall defining the space 28) of the suction muffler body 200 form a blocked sealed space 28 to reduce sound transmission (Lee - col. 3 ll. 67 - col. 4 ll. 2).

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- c. One component that Katayama and Lee have in common is an inlet tube (144 - Katayama, 22 - Lee) which has an opening (144a - Katayama, Undesignated in Lee but clearly shown in figure 4) inside a chamber (143b - Katayama, 24a - Lee) of a suction muffler (143 - Katayama, 200 - Lee). This inlet tube constitutes a second communicating path in both Katayama and Lee. In Lee a resonator wall which forms the resonator 28 faces the opening of an inlet tube 22. Therefore if the wall of Lee that forms the resonator 28 were applied to Katayama then said wall would face the opening 144a of the inlet tube 144 of Katayama. Since the opening 144a faces the same direction as the opening 145a of an outlet tube 145, constituting a first communication path communicating directly with a suction valve 134b in Katayama, the resonator 28 forming wall of Lee would face both openings 144a and 145a of Katayama. The only modification to Katayama would be the addition of the resonator 28 forming wall of Lee, and no other components of Lee. Therefore Lee as applied to Katayama would teach the limitations including: **[claims 8 and 9]** wherein pressure pulsations emanating from a compressing room 122 of Katayama would propagate through the first communicating path 144 of Katayama, and exit directly through the first path opening 144a of Katayama, and collide with a sound insulating wall as provided by a wall that forms a resonator 28 as taught by Lee and applied to Katayama in the combination set forth herewith.
- d. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify a suction muffler wherein inlet and outlet path face

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the same direction in a sound deadening space and face the inside of an outer wall of the suction muffler, as taught by Katayama, so that there was an intermediate wall between two openings and the outer wall of the muffler so as to form an empty space between the outer wall and the added wall, as taught by Lee, in order to attenuate noise of a certain frequency produced by the suction of refrigerant gas going through the muffler (Lee – col. 3 ll. 67 – col. 4 ll. 2).

6. Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katayama et al. JP 2003-42064 in view of Lee et al. US 6,446,454, as applied to claims 1 and 5 above, further in view of Ono et al. 6,155,067.

a. A combination of Katayama and Lee teaches the invention as discussed including: **[claim 4]** (with respect to Katayama) a suction muffler 143 formed of at least two components, elements 147, 148, and 151, as shown in figure 6; **[claim 7]** (Katayama as combined with Lee) and a wall, as the lower wall defining element 28 of Lee is applied to Katayama wherein just as the wall faces openings 22 and 25, if installed in like manner in Katayama the wall would be a vertical wall facing openings 144a and 145a, that would be disposed vertically with respect to an opening face (as defined generally by element 147 as shown in figure 6 of Katayama) of an absorbing body 143 (body therein formed between the outer wall of Katayama and the added wall of the Lee as discussed above).

b. A combination of Katayama and Lee fails to teach the limitation that is taught by Ono for a hermetic compressor provided with a suction muffler 16

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made of a synthetic resin (Ono – col. 4 ll. 39-43) for the purposes of providing a suction muffler with low thermal conductivity (Ono- col. 2 ll. 25-26).

c. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a suction muffler for a hermetic compressor made from synthetic resin type in order to provide a muffler with a low thermal conductivity (Ono- col. 2 ll. 25-26).

***Response to Amendment***

7. Applicant's arguments filed June 1, 2009 have been fully considered but they are not persuasive. With respect to the rejection of claims 1 and 5 as being unpatentable over Katayama JP 2003-42064 in view of Lee US 6,446,454 the applicant argues that a combination of the two references would result in the use of the movable vibration plate of Lee to baffle pressure pulsations and not the use of the fixed wall taught by Lee.

a. Lee does not teach the use of a vibration plate to baffle pressure pulsations. Lee teaches the use of a vibration plate with a vibration frequency of to times the vibration frequency of a pressure pulsation. The vibration plate is not used to suppress pressure pulsations of a compressing room, but as a means to utilize those pressure pulsations to increase flow. Lee teaches "the vibration plate can increase a supply of the refrigerant to the cylinder 15 significantly according to a supercharging effect as the vibration plate 42 increases supply of the refrigerant to the refrigerant supply tube 26 to make up for pressure drop" (Lee - col. 4 ll. 55-59). Suppressing the pressure pulsations of compressing room would have the opposite affect of the vibration plate of Lee



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because suppression would reduce the impact a pressure pulsation would have on a flow of fluid through a muffler.

b. Lee teaches that the resonator 28 is used to attenuate noise, and Katayama is concerned with noise reduction (Lee - col. 3 ll. 67-col. 4 ll. 1; Katayama - Abstract). One of ordinary skill in the art would not think to modify the muffler of Katayama with vibration plate of Lee in order to further the objective of Katayama of noise reduction because the fixed wall which forms the resonator of Lee is used to attenuate noise. Further one of ordinary skill in the art would not use the vibration plate of Lee to suppress pressure pulsations because as taught by Lee the plate has the opposite affect. Lee teaches using the pressure pulsations to cause the vibration plate to vibrate at a higher frequency than the pressure pulsation, and impart the resulting motion of the plate onto a flow of fluid moving through a muffler to increase or supercharge the fluid flow.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEONARD J. WEINSTEIN whose telephone number is (571)272-9961. The examiner can normally be reached on Monday - Thursday 7:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Leonard J Weinstein/  
Examiner, Art Unit 3746

/Devon C Kramer/  
Supervisory Patent Examiner, Art Unit 3746

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